



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/564,842

01/11/2006

Jia-Ni Chu

W9643-02

3234

7590

04/26/2010

Willam D Bunch  
W R Grace & Company Conn  
Patent Department  
7500 Grace Drive  
Columbia, MD 21044-4098

EXAMINER

MICALI, JOSEPH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

04/26/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,842	<b>Applicant(s)</b> CHU ET AL.	
	<b>Examiner</b> Joseph V. Micali	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11-14, 17-20, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-14, 17-20, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of Application***

The amendments/argumentation filed on April 1<sup>st</sup>, 2010 has been entered. Claims 1-7, 11-14, 17-20, and 23-24 remain pending and presented for examination on the merits.

### ***Claim Objections***

1. Claims 1, 11, and 17 are objected to because of the following informalities: In the aforementioned claims, the second recitation of a d<sub>10</sub> particle size is an apparent typographical error for d<sub>90</sub> particle size (as described in the instant specification). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 1793

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**5. Claims 1-7, 11-14, 17-20, and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over 6,527,817 (Fang et al.), in view of US Patent Pub. No. 2003/0198759 (Früge et al.).**

With respect to claims 1, 11, and 17, Fang et al. teaches a polishing composition and polishing method, said composition comprises 10-95 weight percent, based on the solids of abrasive particles (colloidal silica), wherein the abrasive particles have a polydispersed particle size distribution and water (**abstract and column 2, line 62-column 4, line 2**). The standard deviation of the particles is also defined.

However, though the reference discloses the general conditions of the instant invention, it does not specifically disclose a span value by volume of the colloidal silica particles.

Früge is drawn to a coating composition comprising colloidal silica (**title**). Specifically, Früge discloses employing polydispersed colloidal silica with a preferred median particle size being in the range of 20 to 30 nm (instant claimed range is about 20 to about 100), with a span value, or 80% span value ( $d_{90}-d_{10}$ ), preferably being 40 nm (instant claimed range is greater than or equal to 15 nm) (**paragraph 0033**). Thus, as the entire range is within 100 nm, the fraction of particles greater than about 100 nm is 0%.

At the time of invention it would have been obvious to a person of ordinary skill in the art to produce the product/process of Fang including the claimed span value for the colloidal silica

Art Unit: 1793

particles, in view of the teaching of Fruge. The suggestion or motivation for doing so would have been to provide an acceptable span value of the polydispersed colloidal silica particles required by the primary references of Fang but not disclosed.

With respect to claims 2-4, 12, and 18, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 15 nm. Furthermore, as the entire range is within 100 nm, the fraction of particles greater than about 100 nm is 0%.

With respect to claims 5, 13, and 19, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 18 nm. Furthermore, as the entire range is within 100 nm, the fraction of particles greater than about 100 nm is 0%.

With respect to claims 6, 14, and 20, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 20 nm. Furthermore, as the entire range is within 100 nm, the fraction of particles greater than about 100 nm is 0%.

With respect to claim 7, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 22 nm. Furthermore, as the entire range is within 100 nm, the fraction of particles greater than about 100 nm is 0%.

With respect to claim 23, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 25 nm.

With respect to claim 24, Fruge discloses a span value of 40 nm (**paragraph 0033**), which is greater than 30 nm.

### ***Response to Arguments***

**6. Applicant's arguments with respect to the instant claim set have been considered but are moot in view of the new ground(s) of rejection.**

Art Unit: 1793

With respect to applicant's instant argumentation, the issue of span value has now been properly addressed with the addition of the Fruge reference above. Thus, as Fruge explicitly discloses the claimed colloidal silica particles and properties, applicant's argumentation is no longer persuasive. The previously cited WIPO reference (WO 01/98201) has been removed, as the US reference of Fang is sufficient to be used alone as a primary reference.

***Conclusion***

7. Claims 1-7, 11-14, 17-20, and 23-24 are rejected.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph V. Micali whose telephone number is (571) 270-5906. The examiner can normally be reached on Monday through Friday, 7:30am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry A. Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph V Micali/  
Examiner, Art Unit 1793

/J.A. LORENZO/  
Supervisory Patent Examiner, Art Unit  
1793